

AMENDMENTS TO THE CLAIMS

1-15. (Canceled)

16. (Previously Presented) A DNA synthesis reaction composition comprising:

1) a DNA polymerase;

2) water-soluble acidic macromolecular substances or water-soluble salts thereof, wherein said water-soluble acidic macromolecular substances are one or more substances selected from the group consisting of sulfated-fucose-containing polysaccharides, hyaluronic acid, alginic acid, polyglutamic acids, polyacrylic acids and polystyrene sulfates; and

3) components necessary for DNA synthesis using DNA polymerase.

17. (Canceled)

18. (Currently Amended) A DNA synthesis reaction composition comprising:

1) two or more kinds of DNA polymerases;

2) water-soluble acidic macromolecular substances or water-soluble salts thereof, wherein said water-soluble acidic macromolecular substances are one or more substances selected from the group consisting of sulfated-fucose-containing polysaccharides, ~~dextran sulfate, carrageenan, heparin~~, dermatan sulfate (chondroitin sulfate B), hyaluronic acid, alginic acid, polyglutamic acids, polyacrylic acids, polyvinyl sulfates and polystyrene sulfates; and

3) components necessary for DNA synthesis using DNA polymerase,

wherein the two or more kinds of DNA polymerases comprise a DNA polymerase having 3'→5' exonuclease activity, and a DNA polymerase having no 3'→5' exonuclease activity.

19-30. (Canceled).

31. (Currently Amended) A kit for use in *in vitro* DNA synthesis, wherein the kit comprises:

- 1) a DNA polymerase;
- 2) a reaction buffer comprising water-soluble acidic macromolecular substances or water-soluble salts thereof, wherein said water-soluble acidic macromolecular substances are one or more substances selected from the group consisting of sulfated-fucose-containing polysaccharides, ~~heparan sulfate~~, hyaluronic acid, alginic acid, polyglutamic acids, polyacrylic acids and polystyrene sulfates; and
- 3) dNTP, wherein N is a mixture of adenine, thymine, guanine and cytosine.

32-33. (Canceled)

34. (Previously Presented) The kit according to claim 31, wherein said DNA polymerase is a thermostable DNA polymerase.

35. (Canceled)

36. (Currently Amended) A kit for use in *in vitro* DNA synthesis, wherein the kit comprises:

1) two or more kinds of DNA polymerases, wherein the two or more kinds of DNA polymerases comprise a DNA polymerase having 3'→5' exonuclease activity, and a DNA polymerase having no 3'→5' exonuclease activity

2) a reaction buffer comprising water-soluble acidic macromolecular substances or water-soluble salts thereof, wherein said water-soluble acidic macromolecular substances are one or more substances selected from the group consisting of sulfated-fucose-containing polysaccharides, ~~dextran sulfate, carrageenan, heparin,~~ dermatan sulfate (chondroitin sulfate B), heparan sulfate, hyaluronic acid, alginic acid, polyglutamic acids, polyacrylic acids, polyvinyl sulfates and polystyrene sulfates; and

3) dNTP, wherein N is a mixture of adenine, thymine, guanine and cytosine.

37. (Canceled)

38. (Previously Presented) The kit according to claim 36, wherein said DNA polymerase is a thermostable DNA polymerase.

39. (Canceled)

40. (Previously Presented) The DNA synthesis reaction composition according to claim 16, wherein said water-soluble acid macromolecular substances or water-soluble salts thereof are

present in the composition at about 0.1 ng to about 5 μ g, and wherein the composition is about 50 μ l in total volume.

41. (Previously Presented) The DNA synthesis reaction composition according to claim 16, wherein said DNA polymerase is selected from the group consisting of: pol I-type DNA polymerase, *E. coli* DNA polymerase I, Klenow fragment, *Thermococcus aquaticus*-derived DNA polymerase, α -type DNA polymerase, α -type *Pyrococcus furiosus*-derived DNA polymerase, *Thermococcus litralis*-derived DNA polymerase and *Pyrococcus sp.*-derived DNA polymerase.

42. (Previously Presented) The DNA synthesis reaction composition according to claim 16, wherein said DNA polymerase is selected from the group consisting of: *E. coli* DNA polymerase I, Klenow fragment, Taq DNA polymerase, VENT DNA polymerase, Pyrobst DNA polymerase, Pfu DNA polymerase I, Pfu DNA polymerase II, Ex-Taq DNA polymerase, KOD dash DNA polymerase, DEEP VENT DNA polymerase, KOD DNA polymerase and LA-Taq DNA polymerase.

43-44. (Canceled)

45. (Previously Presented) The DNA synthesis reaction composition according to claim 18, wherein said two or more kinds of DNA polymerases are selected from the group consisting of: pol I-type DNA polymerase, *E. coli* DNA polymerase I, Klenow fragment,

Thermococcus aquaticus-derived DNA polymerase, α -type DNA polymerase, α -type *Pyrococcus furiosus*-derived DNA polymerase, *Thermococcus litralis*-derived DNA polymerase and *Pyrococcus sp.*-derived DNA polymerase.

46. (New) A method of enhancing DNA synthesis which comprises:

incubating the synthesis reaction composition of claim 16 in the presence of a nucleic acid to be amplified.

47. (New) A method of enhancing DNA synthesis which comprises:

incubating the synthesis reaction composition of claim 18 in the presence of a nucleic acid to be amplified.